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COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE

VERBATIM RECORD OF THE THREE HUNDRED AND THIRTY-EIGHTH MEETING

Held at Headquarters, New York,
on Tuesday, 5 June 1990, at 3 p.m.

Chairman: Mr. JANKOWITSCH (Austria)

- Attendance by non-members of the Committee
- General exchange of views (continued)
- Attendance by non-members of the Committee

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The meeting was called to order at 3.15 p.m.

ATTENDANCE BY NON-MEMBERS OF THE COMMITTEE

The CHAIRMAN: I should like to inform members that we have received further notes verbales from the Permanent Representative of Cuba and the Permanent Observer of the Holy See to the United Nations, in which they request permission to attend the current session of the Committee on the Peaceful Uses of Outer Space as observers. May I suggest, as I have done previously, that the Committee decide to invite the delegations of Cuba and the Holy See to attend the current session of the Committee, on our usual understanding. If I hear no objection, it will be so decided.

It was so decided.

GENERAL EXCHANGE OF VIEWS (continued)

Mr. GROLIG (Federal Republic of Germany): On behalf of the delegation of the Federal Republic of Germany I should like first to congratulate you, Sir, on your re-election as Chairman of the Committee on the Peaceful Uses of Outer Space. Under your proven expert leadership the Committee will no doubt be able to achieve substantial progress with respect to the various agenda items. The delegation of the Federal Republic of Germany stands ready to contribute its best efforts to this goal.

As in previous years, I should like to begin by commenting on the main space activities of the Federal Republic of Germany. The Federal Republic of Germany regards the peaceful use and exploration of space as a basic element of international cooperation. The importance of the peaceful use and exploration of outer space has greatly increased during the past years and will continue to do so, not least in view of the global challenges which space cooperation can help to meet. In the Federal Republic of Germany account was

(Mr. Grolig, Federal Republic of Germany)

taken of these developments by, among other things, the establishment in the summer of 1989, of the German Space Agency (DARA), a central organization for the coordination and planning of all space matters. In accordance with its aims and the programme and budget framework laid down by the Federal Government, the German Space Agency will organize and manage the Federal Republic's space activities and will represent German space interests at the international level. As members are aware, these interests are focused mainly on multilateral cooperation within the framework of the European Space Agency (ESA). The Federal Republic of Germany is making its own contribution to Europe's space capacity by participating in the three major European Space Agency projects - "Columbus", the European contribution to the international space station called "Freedom", the "Ariane 5" launcher and the "Hermes" space shuttle.

(Mr. Grolig, Federal Republic of Germany)

In this context it gives me particular pleasure to mention the establishment of the European Space Agency's European Astronauts Centre. The Centre will be located in Cologne, where the future corps of astronauts for Columbus and Hermes is to be recruited and trained. This site, which is close to the German Aerospace Research Establishment in Cologne, was selected in recognition of the German Aerospace Research Establishment's extensive experience in the field of manned space flight. After the successful completion of the first German Spacelab Mission, known as D1, in 1985, preparations are under way for Spacelab Mission D2, due to be carried out in 1992, as well as for a German astronaut-scientist to join a mission to the Soviet space station Mir, also in 1992.

A further important event is the successful launch of the Rosat satellite, which has on board the largest X-ray telescope with the most accurate transmission of images constructed so far. Rosat heralds the start of a new era in X-ray astronomy, which scientists hope will bring insights into the origins and development of the universe.

However, space technology plays a part not only in scientific space research. Space technology is equally important in the search for knowledge about our planet and can also make a contribution towards solving some of its problems. This year sees the launch of the first European remote-sensing satellite for global environmental observation, ERS-1, in which the Federal Republic of Germany has a cosniderable share. The first European remote-sensing satellite marks the start of a new genre of space missions aimed at gaining a better understanding of our environment. At present, proposals are under discussion for another major project geared towards

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environmental protection - that is, the launch of a satellite for environmental research.

Finally, I am particularly gratified to point out that the Federal Republic of Germany, together with the European Space Agency and the European Community, will organize the European International Space Year Conference, to be held during International Space Year, 1992. This conference, to be called "Space in the service of the changing Earth", will be held together with a parallel exhibition from 30 March to 3 April 1992 in Munich, and will concentrate in particular on practical aspects of the use of space - that is, mainly environmental observations.

Yet the Federal Republic of Germany's international cooperation on the peaceful uses of space goes beyond the above-mentioned projects. It embraces almost all areas of space and is undertaken together with many countries throughout the world, each project being geared towards specific interests and requirements. In this context, special attention is paid to ways of using space technology for the benefit of developing countries. The Federal Republic of Germany continues to attach special importance to the use of remote-sensing for the specific requirements of the developing countries. These tasks, which involve in particular the areas of agriculture, forestry, surveying and cartography, geoscientific exploration, telecommunications and weather forecasting, are carried out by several specialized organizations on behalf of the Federal Government.

The space activities I have described are clear evidence that the main thrust of the Federal Republic of Germany's space policy is directed towards international cooperation. This is done not only for reasons of economic

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prudence - that is, burden-sharing and cost-cutting - but is rather a demonstration of the Federal Republic's conviction that, as a result of this international interlocking, confidence, which plays such an important part in the coexistence of nations, can be developed and strengthened. Developing and intensifying international space cooperation on the basis of mutual trust is the best way of ensuring that space continues to be used for peaceful purposes. The Committee on the Peaceful Uses of Outer Space and its two Sub-Committees play an important role in coordinating this cooperation within the framework of the United Nations. The Federal Republic of Germany attaches great importance to these committees and thus has always done everything within its power to contribute to the success of their activities.

We are therefore particularly pleased that the work carried out by the Sub-Committee this year has resulted in a decisive breakthrough and a major step forward in the preparation of the list of principles for the use of nuclear power sources in outer space.

In the Scientific and Technical Sub-Committee, as well as in the Legal Sub-Committee, agreement was reached on the central principle concerning guidelines and criteria for the safe use of nuclear power sources in space. Thus the total number of principles adopted by consensus was increased to six, which amounts to over half of the list of principles envisaged. This should be seen as an encouragement to adopt the remaining principles in the near future. My delegation hopes this will soon be possible in view of the constructive spirit and cooperative atmosphere that prevails in the Committee on the Peaceful Uses of Outer Space and its Sub-Committees. We would thus succeed in continuing the positive tradition of achieving joint solutions to issues that concern mankind as a whole.

(Mr. Grolig, Federal Republic of Germany)

The experience gained in preparing the nuclear-power-sources principles has once again shown what can be regarded as a general rule for the discussion of all other topics under consideration by the Committee. The progress of man's activities in space depends on technological developments and future experience in space, which in turn will be affected by regulations governing activities in outer space.

Thus one of the most important tasks at this point in time is to ensure that the use of space does not hinder future activities or pose any hazards to humanity but that the opportunities it offers can be seized for the benefit of all. To this end, regulations on specific issues should be introduced without hesitation when the time is ripe and the appropriate expertise is available, while they should be avoided where that is not the case.

I should like to end my general remarks at this point to avoid impinging on the topics to be covered under individual agenda items. I am confident that the Committee on the Peaceful Uses of Outer Space will once again prove its ability to function constructively, and I would like to assure the Committee that the delegation of the Federal Republic of Germany will do all it can it contribute to the success of this session.

Mr. KNUTH (German Democratic Republic): Mr. Chairman, let me say, on behalf of the delegation of the German Democratic Republic, how pleased we are to see you presiding over another session of the Committee on the Peaceful Uses of Outer Space. I am confident that your acknowledged expertise and professional skills will definitely facilitate an in-depth discussion of all agenda items in a spirit of cooperation and will help initiate further steps in the search for solutions acceptable to all.

It is indeed reassuring to note that on the threshold of the final decade of this century encouraging tendencies have come to prevail in international affairs. Relations among States in all fields are gradually being marked be cooperative approaches and joint action. International cooperation in outer space research as well is broadening and becoming ever more diversified. My delegation shares the view of other members of the Committee that space research, the peaceful uses of outer space and broad international application of the relevant findings are areas of human endeavour which are taking on ever greater importance in terms of the systematic solution of global issues. The space research projects carried out in the recent past and the valuable results they produced are cases in point. On behalf of my delegation, I should like warmly to congratulate all States and organizations participating in these projects on the success achieved for the sake of space research.

As to the German Democratic Republic, progress has been made in a number of current projects in the context of the INTERCOSMOS programme, and new projects have been launched. A relevant report on the activities of the German Democratic Republic in the exploration and peaceful uses of outer space has been submitted to the Secretary-General.

(Mr. Knuth, German Democratic Republic)

International cooperation forms the basis of successful space research, and it is the only way to live up to what is formulated as a principle under article 1 of the outer space Treaty, namely that

"The exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind". (General Assembly resolution 2222 (XXI), annex)

Attitudes towards the development of international cooperation in the exploration and peaceful uses of outer space should generally be determined by the awareness, as the Brundtland report put it in 1987, that

"The future of the space as a resource will depend not so much on technology as on the slow and difficult struggle to create sound international institutions to manage this resource. It will depend most of all upon mankind's ability to prevent an arms race in space". (A/42/427, chap. 10, para. 57)

In that regard, the establishment of a universal space organization within the United Nations system would no doubt be useful. Just as we have renounced nuclear, biological and chemical weapons, we have advocated the prevention of an arms race in outer space, a position which has been expressed in various international forums, for instance the Geneva Conference on Disarmament, where the delegation of the German Democratic Republic has submitted quite a few concrete proposals on the subject. All States remain called upon to pool their efforts in order to preserve outer space as a province for peaceful human pursuits.

(Mr. Knuth, German Democratic Republic)

The Committee on the Peaceful Uses of Outer Space and its Sub-Committees are undertaking intensive and valuable efforts to promote international cooperation in space research. Those efforts have been particularly successful with regard to the elaboration of draft principles relevant to the use of nuclear power sources in outer space. That positive development should also continue in other fields of the Committee's activities. Closer, subject-related, cooperation between the Scientific and Technical Sub-Committee and the Legal Sub-Committee would definitely be highly beneficial for the solution of the problems with which the Committee on the Peaceful Uses of Outer Space will be faced in the future.

As regards the activities of the Outer Space Affairs Division, I wish to express my delegation's sincere appreciation to the staff under the guidance of Mr. Jasentuliyana for the dedication they display in performing their tasks.

The German Democratic Republic supports the General Assembly's endorsement of the initiative of international scientific organizations and bodies to designate 1992 as International Space Year. Broad participation by all interested States will have a positive impact when it comes to preparing and observing International Space Year, and will be helpful in producing substantive results. The experience gained in the process, as my delegation sees it, could provide a sound basis for future global cooperation in space research projects well beyond 1992. We also hope that International Space Year will have beneficial effects on the United Nations Programme on Space Applications.

As is known, the forty-first Congress of the International Astronautical Federation will be held in Dresden from 6 to 13 October 1990. Addressing delegations present here, I wish to renew the invitation already extended at

(Mr. Knuth, German Democratic Republic)

this year's session of the Scientific and Technical Sub-Committee and to express our hope that we shall be able to welcome many representatives to Dresden in October.

Mr. DIMITROV (Bulgaria): Please allow me to congratulate you on behalf of my country's delegation, Mr. Chairman, on your election once again to preside over the work of the Committee. We are convinced that under your able guidance the thirty-third session of the Committee will make a significant contribution to the development of international cooperation in the peaceful uses of outer space. I should like also to congratulate the other members of the Bureau and to wish them success in their work.

Over 30 years has passed since the establishment of the first permanent and broadly representative intergovernmental body dealing with specific issues relating to the peaceful uses of outer space. The rapid development of technology and of means of transportation over this period has resulted not only in impressive progress in space research but also in the development of those of its components that are of an applied nature and that have a direct impact on people's lives. It would be very difficult now to imagine the world communications network and weather forecasting without satellites orbiting Earth. Those are only two examples showing how the results of space research have entered everyday life within such a short period of history.

New States are joining in space research every year while the difficulties accompanying it, and its complicated nature, require not only considerable knowledge but also significant amounts of money, making space exploration nearly impossible for any single State to conduct, no matter how powerful it may be. International cooperation is thus an important and necessary condition for success in the use of outer space for peaceful purposes.

(Mr. Dimitrov, Bulgaria)

Time has proved the usefulness of the Committee on the Peaceful Uses of Outer Space as a unique body for international cooperation in this field. The sessions of our two Sub-Committees last March and April were examples of its successful operation in the new conditions of our world.

(Mr. Dimitrov, Bulgaria)

The Bulgarian delegation welcomes the results achieved at the session of the Scientific and Technical Sub-Committee with the adoption of recommendations for the safe use of nuclear power sources, a question that has a direct bearing on the preservation of the environment and is thus of enormous significance. The positive results achieved on that problem have established favourable conditions for reaching consensus in the Legal Sub-Committee on the text of principle 3 regarding the guidelines and criteria for the safe use of nuclear power sources in outer space. We expect that constructive approach to serve as an example in discussing the other principles in the document.

We believe that work should continue on the other important matters on the agenda of the Legal Sub-Committee, such as the definition and delimitation of outer space and the character and utilization of the geostationary orbit, in order to bring closer the positions of Member States on those issues. The legal aspects related to the application of the principle that the exploration and utilization of outer space should be carried out for the benefit and in the interests of all States, taking into particular account the needs of developing countries - aspects now being discussed in the Sub-Committee - are also of considerable importance.

Bulgaria has gained experience in space research and has at its disposal researchers and scientific institutions working in this field. Bulgaria is a small country of limited material resources that determine our interest in international, regional and bilateral cooperation in space activities. The results of our participation in such ventures are indeed encouraging: two flights of Bulgarian cosmonauts aboard Soviet space ships; the successful performance of Bulgarian-designed equipment in the Phobos international project; the Shipka project; and others.

(Mr. Dimitrov, Bulgaria)

In 1989, Bulgaria carried out space-physics research through such projects as Aktivni, Apex, Interbol and Granat. Preliminary processing was also done of images received from the Fregat equipment in the Phobos project and a three-dimensional image of Mars' moon was obtained. Other projects conducted with Bulgarian participation were in such areas as remote sensing, space biology and medicine, space communications, and weather forecasting. The review of Bulgaria's national outer space activities in 1989 was submitted to the Secretariat for circulation as a document of the Committee on the Peaceful Uses of Outer Space.

As the Committee is well aware, in-depth social, economic and political changes are under way in Bulgaria, which is itself a part of the dynamically changing Eastern and Central Europe. Those processes are also having an impact on science and applied research by streamlining their institutional bases and their financing and management. Priorities in the different spheres of space research are being reassessed mainly on the basis of economic criteria. The updated national policy in this field will be embodied in a long-term national space programme. We are convinced that priority in the programme will be given to the aims and forms of Bulgaria's participation in international cooperation in space activities. Thus, my country will make its due contribution to the holding of the International Space Year approved in paragraph 20 of General Assembly resolution 44/46.

The current session of the Committee will examine a number of important topics. The Bulgarian delegation welcomes the fact that, according to paragraph 26 of resolution 44/46, a priority item on the agenda of this session is the question of the ways and means of maintaining outer space for peaceful uses. In the preamble of that resolution, the General Assembly voices its grave concern at the extension of the arms race into outer space

(Mr. Dimitrov, Bulgaria)

and recognizes that preventing an arms race is an essential condition for the promotion of international cooperation in the exploration and peaceful use of outer space for peaceful purposes. The Bulgarian delegation supports that view and has on numerous occasions stated in the Committee and in other United Nations bodies that space exploration should be exclusively of a peaceful character.

At its forty-third session the General Assembly decided to add a new item to the Committee's agenda, "Spin-off benefits of space technology: review of current status". That item will be discussed for a second time at the present session. The Bulgarian delegation is of the view that the inclusion of the item in the agenda of the annual session of the Committee is one means of applying in practice the principle that the exploration and utilization of outer space should be carried out for the benefit and in the interests of all States. The discussion of that issue permits States to exchange information on new materials and technologies that have been tested or obtained in space and can be applied on Earth. Thus, space exploration and research influence the development of technologies and of the national economies of States in all parts of the world.

I would like to express the hope of my delegation that the work of the current session of the Committee on the Peaceful Uses of Outer Space will be conducted in a constructive atmosphere and that States will show goodwill and the desire for cooperation in the spirit of our time. My delegation is prepared to contribute to that end.

Mr. SUTRESNA (Indonesia): I should like at the outset to express my delegation's pleasure and satisfaction at seeing you, Sir, presiding over the thirty-third session of the Committee on the Peaceful Uses of Outer Space. We are fully confident that, guided by your experience and outstanding qualities of leadership, this session will conclude its deliberations successfully.

I should also like to convey my delegation's sincere appreciation of the Chairman of the Scientific and Technical Sub-Committee, Professor Carver of Australia, and of the Chairman of the Legal Sub-Committee, Mr. Vaclav Mikulka of Czechoslovakia, for the dedicated efforts and contributions during the meetings of their respective bodies.

At the start of the last decade of this century, it is worth while to consider seriously the concerns of today and tomorrow, characterized by a growing concern over the evolution of our environment under the pressures of the world's population, the unprecedented growth of knowledge, science and technology, and the potential threat that space will pose to life on our planet. Important developments have taken place during the last few months in Central and Eastern Europe and in other parts of the world, necessitating a new consensus and a new approach to future security framework for all national, replacing the old and historical framework of the post-Second-World-War era. And beyond a doubt, that includes our efforts to safeguard outer space for peaceful uses.

The ambiguities attendant upon human activities in outer space are obvious. The common view shared by all is of the danger of an extension of the arms race and an armed conflict in outer space that will affect mankind and planet Earth in a negative or even destructive way.

(Mr. Sutresna, Indonesia)

Events have taken place giving us renewed hope for a better future for mankind and for the safeguarding of the environment. We hope to see an end to the arms race through the further lowering of tensions.

Our chief aim therefore must be to continue the mastering of space for peaceful purposes. The space age began and activities have increased during the past 30 years or so in accordance with the principle that outer space should be for peaceful uses to the benefit of mankind. That policy was strengthened through international law, treaties, conventions and agreements. Accordingly, the history of space exploration and activities so far has been characterized by the absence of armed conflicts in space.

(Mr. Sutresna, Indonesia)

The terrestrial context for efforts to safeguard outer space for peaceful uses is complex. This world itself is a large and complex system whose problems cannot be broken down into independent, local or regional matters. The dynamics and mechanisms of this system are still not well understood. We should therefore give careful consideration to how we manage the Earth, taking into consideration the protection of the environment, which is the paramount objective of tomorrow. In this regard, Indonesia supports paragraph 23 of General Assembly resolution 44/46, calling upon States to focus attention on the probability of collision between space debris and other objects, and welcomes the studies on this issue conducted by some countries. We hope that these will be continued and make contributions to the preservation and protection of the environment.

Space science and its applications, important in the past, will play an even more enhanced role in the reduction of tensions among nations. For instance, a rapid high-visibility, transparent, accurate and timely satellite-based information system will provide the necessary confidence and facilitate the transition from the old to the new approaches.

Some key issues have already emerged: reducing tensions and conflicts between nations; the prevention of the arms race in outer space; space commercialization, industrialization and internationalization; and a legal framework to maintain and control the growth and development of space science and applications, to name but a few. Dealing with them presupposes scrupulous observance of agreements on the prevention of the use of space for military purposes.

In the light of rapprochement between the leading space Powers, special attention should be given to the legal aspects of commercialization of space

(Mr. Sutresna, Indonesia)

activities, which is no longer an academic question, for space operations require massive capital investments, and the attendant risks require modalities to recover such outlays. It is to be expected that while past military or related motivations of security and defence indicated the direction of space programmes, the future course of developments of peaceful activities should contain the potential to recoup investment.

Articles I and IV of the outer space Treaty address the non-military uses of space, and the time has now come to look into the issues of space commercialization and industrialization. Indeed, the issues of the military, peaceful and commercial uses of space can and should be approached as an indivisible whole, requiring immediate action, so as to make possible an intelligent and responsible dialogue between industrialized and developing countries. In this context, cooperation and mutual benefits must be considered as international obligations and conditions for the legality of all space activities, whether scientific or commercial.

The time has come seriously to consider the possibility of a stronger role for the United Nations, to monitor and control the peaceful uses of outer space for the benefit of mankind. Those may include, but not be limited to, the key issues of maintaining and controlling the habitability of Earth and sustainable growth and development; global functions and uses of space science and applications, such as Earth observations from space and their capabilities for understanding the global processes; a legal framework for the commercialization of space and its resources for the benefit of mankind and of all nations, irrespective of their degree of economic and scientific development; and the role of developing nations in those activities.

(Mr. Sutresna, Indonesia)

In the case of developing countries, what is required is a capacity or aptitude to cope with the ramifications of the space age, while gaining from domestic, regional and global cooperation.

I should like briefly to comment on the new item 5 on the Legal Sub-Committee's agenda. It is the firm conviction of my delegation that it is an issue of transcendental importance. Realizing that space activities, specifically the commercialization of space, may have a negative impact on the developing countries, we believe that the time has come for the Committee to give special attention to the matter. In this context, we are pleased to note the establishment of a Working Group on agenda item 5, under the chairmanship of Mr. Raimundo Gonzalez of Chile.

The issues concerning the legal framework to ensure the growth and development of space science and applications is important for all, especially the developing nations. Consequently, States should have equal access to space, based on the principle of the common heritage of mankind, as laid down in the outer space Treaty. If that is true, then the rights of nations shall be interpreted as being dependent not on the power of a State, but on the simple fact of its existence as a legal person according to international law. In this sense, the concept of access can be broadly understood to mean the right of States to undertake activities in space, to participate in joint space programmes and to exchange information on science and technology.

It is undeniable that the sharing of benefits accrued from outer space by all countries continues to be of concern to many countries. In this respect, awareness of the importance of the space age which has dawned on us and the recognition that all nations are subject to the same regulations are essential prerequisites.

(Mr. Sutresna, Indonesia)

In this respect, with regard to the Scientific and Technical Sub-Committee, I wish to express my delegation's appreciation of the adoption of the theme entitled "Applications of airborne and satellite remote sensing for prospecting mineral and ground-water resources, with emphasis on agriculture, taking into particular account the needs of developing countries" for the forthcoming twenty-eighth session, in 1991. Indonesia will make available its data and information related to this theme to interested countries.

In International Space Year 1992, marking the end of the first decade since the second United Nations Conference on the Exploration and Peaceful Uses of Outer Space, UNISPACE 82, Indonesia plans to hold a National Space Science and Applications Conference, which we hope to organize as a regional event. Our idea is to hold it once every two years in the countries of the region. The aim is to focus attention on the benefits of space science and applications, through the exchange of data and information on activities, projects, research and development and to stimulate research and development in matters relating to life sciences, global change, planetary exploration and astronomy, taking into consideration the spirit of Article I of the outer space Treaty, which calls for exploration and scientific investigations leading to the uses of outer space. Other important aims are to promote and induce joint efforts, regional and international cooperation in developing spin-off benefits of space science and applications and ensuring that all nations, in particular the developing nations, have access to those benetits.

In this context, we wish to inform the Committee of our plans to establish a national centre for long-term education and research in space science and applications. We think the centre will be of great importance, as

(Mr. Sutresna, Indonesia)

the needs for graduate-level education expertise, research and development in the region are expected to rise sharply in the next decade. An opportunity is thus offered for the centre to be established as a regional centre to serve the needs of the nations in the region, as well as those beyond. We plan to have the centre operational some time during 1992, as part of the events marking International Space Year 1992.

Over the last five years Indonesia has organized a series of short-term courses to provide hands-on skills of professionals, as well as long-term education programmes leading towards secondary and tertiary degrees in space science and applications, including - but not limited to - remote sensing, digital image processing, interpretation and analysis, meteorology, oceanography, coastal marine monitoring and control, land-use and urban planning, atmospheric pollution and environmental studies, to name but a few.

(Mr. Sutresna, Indonesia)

We now have to come to the conclusion that to optimize the cost of training, education and research efforts, it is essential to have these individual programmes organized as an integrated education and research centre or institute, providing opportunities in the region. The centre will also be designed to handle studies and development projects, give advice and hold consultations.

Although still very limited, we do have a system of weather observation facilities and ground stations for the tracking of satellites. This basic,, embryonic capability may be useful for on-ground validation of space observation data.

We are planning to establish, together with a sponsoring country, an equatorial high-atmospheric weather radar in Sumatra to serve as an international research facility for global climatic research.

We have a vertical sounding rocket station for use in international cooperative projects, and we are studying the possibility and feasibility to develop and construct an equatorial launch facility to facilitate the launching of space systems in the equatorial easterly direction.

Above all, we have the unique location between huge land masses and vast oceans, consisting of thousands of islands, large tropical forests and endless shore lines - a natural field laboratory for research in atmospheric studies, meteorology, global climatic and environmental changes.

Through you, Mr. Chairman, we should like to invite all nations to join us in international cooperative research, bilateral and/or multilateral, in seeking solutions to the problems of the Earth's environment, in on-ground validation of space observations, and many other activities of common interest. Let us join forces and share the responsibility to face the future.

(Mr. Sutresna, Indonesia)

At this point again we note with concern the limited availability of funds to implement programmes of space science and applications, education, research and development. We appeal to the developed nations to take this issue into serious consideration.

Finally, we assure the Committee that Indonesia is committed to the pursuit of methods and solutions, and ways and means, for the sustainable growth and development of mankind, the planet Earth and its living environment.

Ms. TAYLOR (United Kingdom): First let me say how glad we are to see you, Sir, once again chairing our proceedings. We know that the work of the Committee will prosper in your capable and experienced hands.

It is encouraging that following the Committee's considerable achievements since its creation in 1959, notably the five major space Treaties, it is continuing to make an important contribution to international collaboration in outer space through its work on nuclear power sources. We are happy to have been able to play a role earlier this year in the significant progress made in the Scientific and Technical and Legal Sub-Committees on the nine principles. We very much hope that this impetus can be sustained and that an agreement on nuclear power sources can now be reached quickly. With this in mind we should like to see the Legal Sub-Committee devote a greater proportion of its next session to resolving the remaining difficulties. We believe that an agreement can be achieved soon, to the benefit of all Member States.

I should like to take this opportunity to say something about the United Kingdom's space policy. The Government of the United Kingdom channels the bulk of its support for civil space activities through the programmes of the European Space Agency. The main thrust in the applications field is now

(Ms. Taylor, United Kingdom)

towards the development of Earth observation techniques for providing data services and products. Such development is particularly important to improving our understanding of global environmental issues, such as the depletion of the ozone layer and the "greenhouse effect" since Earth observation measurements provide unique information about changes taking place on the Earth's atmosphere and surface. At the same time, Earth observation data and services promise to have considerable longer-term commercial potential in a wide range of uses.

The United Kingdom has taken a substantial share in the preparation of the European Space Agency remote-sensing Earth Resources Satellite (ERS-1) equipped with an innovative synthetic aperture radar and due to be launched later this year. An Earth Observation Data Centre is being set up at the Royal Aerospace Establishment at Farnborough in time for the start of ERS-1 operations, and this facility will play a key part in the longer-term commercial exploitation of Earth observation.

The Government is also committed to making an important contribution to the European Space Agency's proposed second remote-sensing satellite, ERS-2, scheduled for launch in 1994 or in 1995. The ERS satellites will provide continuity in ocean, land and ice measurements used in climate research, including the study of the "greenhouse effect". Continuity of data from the range of instruments on these satellites will also be of importance to the development of commercial applications of remote sensing which the Government is committed to encourage.

The United Kingdom has leadership in the design and development of another Earth observation project - the Columbus Polar Platform - and we plan to play an important part in the first mission to be flown by the platform.

(Ms. Taylor, United Kingdom)

In space science the United Kingdom has continued to support the European Space Agency's Horizon 2000 Programme, making a significant contribution to the development of the first two cornerstone missions. We are also participating in the planning for the first medium mission to investigate Saturn.

The United Kingdom also encourages the utilization of space by other countries, particularly the developing countries. We participate in, or contribute funds to, space projects, through organizations such as the World Bank, the European Community and the European Space Agency (ESA) and offer training schemes and fellowships through both international and national arrangements. They include contributions to ESA's training activities in Latin America, Africa and Asia.

Finally, we look forward to contributing to the proceedings of the Committee as they unfold during the session.

Mr. FAWZY (Egypt): As we begin our debate on how to maintain outer space for peaceful uses, we have to acknowledge the complexity of the subject and the double-edged nature of progress in space technology because it entails both military and non-military implications. This underscores the intricate and multi-faceted consequences of advanced space technology which transcend concerns shared by the Conference on Disarmament and the Committee on the Peaceful Uses of Outer Space with their common ultimate objective of maintaining outer space for peaceful uses. The realization of this objective would certainly be facilitated by the establishment of permanent contacts between the two bodies.

The work of the two sub-committees of the Committee on the Peaceful Uses of Outer Space during their last sessions showed positive achievements,

(Mr. Fawzy, Egypt)

especially on the issue of nuclear power sources. My delegation welcomes these developments, but we hope that the Legal Sub-Committee will be able to achieve unanimity on the other principles relevant to the use of nuclear power sources at a quicker pace.

(Mr. Fawzy, Egypt)

We should also like to emphasize in this regard that the International Atomic Energy Agency is bound to play a pivotal role in the implementation of the principles agreed upon in this field. We are also pleased at reaching the point of establishing the Working Group on the new item on the agenda of the Legal Sub-Committee, although we do not find that as an end in itself. We think that discussions under this item should focus on ideas that enhance international cooperation on scientific, technical and educational levels. The exchange of information in these fields should be more institutionalized to provide accessibility for countries with different space capabilities. Ultimately these objectives should be developed in the form of a legal framework.

With respect to the item relating to the geostationary orbit, we think that, as it is of finite dimensions, emphasis should be maintained on ways and means of ensuring rational and equitable use and access.

It is regrettable that, in spite of the positive developments to which I have referred earlier, the Committee on the Peaceful Uses of Outer Space and its Sub-Committees are moving at a slower pace on other subjects pertaining to the establishment of the principles guiding the peaceful uses of outer space. The implementation of the recommendations of UNISPACE 82 is a pertinent example. As we are approaching a decade after their adoption, more emphasis should be put on the means necessary to ensure their full implementation.

In conclusion, I should like to comment on the issue of space debris. It is a welcome and promising development that a convergence of views is growing on the importance of preserving the outer space environment and on the fact that attention should be given to the problem of space debris in all its aspects. We hope that this convergence of views will initiate a constructive dialogue on this subject.

Mr. NAGAI (Japan): I should like at the outset to express my delegation's satisfaction at seeing you, Sir, as Chairman once again. I am confident that, with the benefit of your wisdom and broad experience, the Committee's work this session will be guided to a successful conclusion. You may be assured that my delegation is ready to extend its full cooperation as you carry out your important task.

I also wish to express our sincere gratitude to the Chairman of the Scientific and Technical Sub-Committee, Professor John Carver of Australia, and to the Chairman of the Legal Sub-Committee, Mr. Vaclav Mikulka of the Czech and Slovak Federal Republic, for successfully directing the deliberations in their respective Sub-Committees this year.

As a result of remarkable advances in space technology, progress continues to be made in the exploration and utilization of outer space for peaceful purposes. As clearly stated in the outer space Treaty of 1967, the exploration and use of outer space should be pursued for the benefit of all mankind. It has become increasingly clear that the development of outer space has the potential to contribute to economic and social development as well as to the solution of urgent global problems, such as environmental degradation.

My delegation believes that in order to ensure that the benefits - both actual and potential - gained from the exploration and utilization of outer space are extended to all countries, it is important to promote international cooperation in a pragmatic and practical manner. My delegation sincerely appreciates the principal role that this Committee and its two Sub-Committees have been playing in enhancing international cooperation and in codifying international space law.

In the context of promoting international cooperation, my delegation welcomed the General Assembly's endorsement by consensus last year of the

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initiative taken by international scientific organizations and bodies to designate 1992 as International Space Year (ISY). We hope that the International Space Year will successfully carry out, in cooperation with Member States and relevant organizations, a variety of projects, particularly in the area of training and education, that focus on space applications.

My delegation is gratified that the third meeting of the Space Agency Forum on International Space Year (SAFISY) was held in Kyoto, Japan, on 17 and 18 May, with the participation of experts from 20 countries and 8 international organizations. During the meeting they reviewed the different national and international activities programmed for the International Space Year and coordinated the scheduling of these events. The Government of Japan intends to participate actively in the International Space Year and is currently studying possible ways and means of extending cooperation.

At this time, we also would stress the importance of implementing the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space - UNISPACE 82 - and of further promoting the United Nations Space Applications Programme. My delegation appreciates the efforts of the Outer Space Division to implement the Programme in a more effective manner, and hopes that the International Space Year will give renewed stimulus to the Programme.

My delegation notes with satisfaction that this year the two Sub-Committees advanced their work on the elaboration of draft principles relevant to the use of nuclear power sources of outer space. We are particularly gratified that the Scientific and Technical Sub-Committee has reached a consensus on the question of guidelines and criteria for the safe use of nuclear power sources and that, on the basis of its recommendations, the Legal Sub-Committee has agreed on principal 3, which has been one of the

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most intractable aspects of the draft principles on nuclear power sources. My delegation hopes that we can build on this progress as we take up the remaining principles and reach a consensus on the entire set of draft principles as early as possible.

My delegation also notes with satisfaction that this year, in accordance with the agreement reached at the last General Assembly session, the Legal Sub-Committee has started substantive discussion on a new item, namely, "Consideration of the legal aspects related to the application of the principle that the exploration and utilization of outer space should be carried out for the benefit and in the interests of all States, taking into particular account the needs of developing countries". We should like to take this opportunity to congratulate Ambassador Gonzalez of Chile on his election as Chairman of the Working Group on this item. We foresee that this important new item will be the focus of an active and constructive exchange of views based on the information presented by Member States concerning the existing network of national laws and international treaties.

Turning now to the question of efficiency, my delegation believes it is necessary to review systematically the working methods and procedures of the main Committee on the Peaceful Uses of Outer Space and its two Sub-Committees in order to devise operational procedures that are as flexible and efficient as possible. We are of the view that Member States should continue to study this important matter and that it is advisable to set up a working group to facilitate such study.

I would now like to refer briefly to the various activities in the exploration and peaceful uses of outer space which Japan, in cooperation with one or more other countries, is now or will in the future be undertaking.

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In the field of space science, in February 1989 Japan launched the auroral observation satellite EXOS-D (AKEBONO), which has been carrying out various activities including ultra-violet image-taking of auroras. A product of international joint research, EXOS-D is fitted with observation equipment produced by Canada.

Last January, Japan launched the MUSES-A satellite for the purpose of testing various technologies, including those involved in lunar swing-by operations, precise orbit determination, control of orbit and high-efficiency data transmission, all of which are necessary for future interplanetary missions. The MUSES-A is fitted with equipment - a dust counter - produced by the Federal Republic of Germany.

In the field of applied uses, the remote-sensing data obtained by the Marine Observation Satellite, MOS-1, Japan's first remote-sensing satellite, which it launched in 1987, have been disseminated to countries on an open and non-discriminatory basis. Moreover, in cooperation with the ASEAN countries, and using the data obtained by MOS-1, Japan has conducted research programmes on data analysis, marine resources and land-use development technologies. In addition, Japan launched Geostationary Meteorological Satellite-4 (GMS-4) in September 1989, and it has been in steady operation since then. Japan has also been holding seminars and training courses on remote-sensing technology with the participation of experts from those countries. As a follow-up satellite of MOS-1, Japan launched MOS-1b in February this year.

With regard to future projects, Japan is planning to launch an earth-resources satellite, ERS-1, in 1991. Its main purpose will be to explore, as its name implies, natural resources on Earth. Moreover, in an effort to contribute to the solution of global-climate-change issues, Japan is

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planning to launch an advanced earth observation satellite, ADEOS, in 1995. It will conduct various monitoring activities from space.

In the field of communications, since November 1988 Japan has been conducting joint experiments with Australia, using the Engineering Test Satellite-V (ETS-V), launched in 1987, which was the first attempt ever made to incorporate land, maritime and aeronautical communications in one project. Japan is planning to launch the Engineering Test Satellite-VI (ETS-VI) in 1993 to conduct research on fixed satellite communications, mobile satellite communications and inter-satellite communications. Further, in 1988 Japan launched communications satellites CS-3a and CS-3b by an H-I launch vehicle, and is getting ready to launch broadcasting satellites BS-3a and BS-3b in the summers of 1990 and 1991, also by an H-I launch vehicle.

Having successfully launched six satellites so far, the H-1 will continue to be Japan's major launch vehicle. Currently under development is the H-II, which will have the capacity to launch into geostationary orbit the larger, two-ton satellites that are planned for the 1990s.

In addition to those activities, Japan is participating, together with the United States, Europe and Canada, in an international project to construct a permanently manned space station. Under that project, it has been developing the Japanese Experiment Module (JEM), which will be attached to the space station in 1997. That module will perform different high-technology experiments in such fields as material processing, life sciences and microgravity.

We are pleased by the progress that peaceful activities in the exploration and use of outer space have made all over the world, and are gratified that international cooperation is growing steadily. Japan is

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determined to contribute to further progress in this area through its own efforts as well as those undertaken in cooperation with other countries.

The CHAIRMAN: I now call on the representative of the European Space Agency.

Mr. ARETS (European Space Agency (ESA)) (interpretation from French): The European Space Agency is pleased to see you, Sir, once again chairing the work of the Committee. We are also pleased to have this opportunity to report to the Committee on our achievements over the last 12 months and our present and projected activities aimed at permitting the use of space technology by the greatest number of people.

In July 1989 the Ariane launcher placed in orbit the most important telecommunications satellite ever developed in Europe, Olympus. That satellite makes it possible to broadcast direct television programmes; it ensures transmissions between small stations. Experiments in the use of the 10-30 Ghz band have been carried out. A particularly promising application concerns tele-education. Tele-education programmes are broadcast every day for nine hours. An association for the promoters of such programmes, EUROSTEP, has been set up. A satellite education project, as part of International Space Year, has been based on experience acquired in Europe.

In February 1990, the scientific satellite Hipparcos was successfully launched by Ariane. Unfortunately, the failure of one of the satellite's apogee boost motors meant that the satellite could not reach geostationary orbit. However, the Hipparcos mission is being executed thanks to the use of several additional ground stations. The star catalogue that Hipparcos is to establish can be realized if the satellite continues to function as satisfactorily as at present. The incident of the non-firing of the apogee

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boost motor obliged the technical teams of the Agency and European industrialists to use their imaginations and to exercise great care to ensure the success of the mission, which appeared to be compromised in the days following the launching.

The Agency has also been associated with the Hubble Space Telescope programme. That telescope was placed in orbit in April 1990 by the NASA Space Shuttle. The Agency provided equipment for the telescope, as much as 15 per cent of the programme's value, and European astronomers therefore have 15 per cent of observation time. This is a very successful example of international cooperation.

Ariane launchings were interrupted after the failure of flight 36, which occurred after an uninterrupted series of 17 successful launchings. The cause of that failure has been pin-pointed, and the functioning of the launcher is by no means at fault. The flights will resume in the summer, in mid-July.

In coming months the Agency will place in orbit for EUMETSAT an additional METEOSAT satellite. The earth-observation satellite ERS-1 will be launched, as will the Ulysses probe created by the Agency in cooperation with NASA.

The development of the future Ariane V launcher is going ahead normally, and decisions on the second phase of the Hermes, the European space plane, and Columbus, and cooperation in the international space platform, will be taken in mid-1991, six months later than is shown on the original timetable.

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User programmes on science, telecommunications, Earth observation and microgravity are proceeding as expected.

By 1 October 1990, Mr. Jean-Marie Luton, currently Director-General of the French National Centre for Space Studies, will take up his post as Director-General of the Agency as the result of a February decision by the organization's board.

In the area of international relations, cooperation with the United States, Japan and Canada in the context of the international space station is proceeding. After some difficulties resulting from changes in the programmes of the National Aeronautics and Space Administration of the United States (NASA), a climate of better understanding has been established among the partners.

Several of the Agency's scientific programmes are being undertaken in cooperation either bilaterally with NASA or multilaterally with the United States, the Soviet Union and Japan. Cooperation with Japan continues to develop, and next week the sixteenth annual meeting will take place between Japan and the Agency, which will bring us up to date in the various areas of cooperation.

Moreover, the Agency has continued its efforts to ensure that its remote-sensing programme - which will contribute to the general effort to monitor the environment - can be utilized by the greatest number of users. The programme comprises the ERS-1 satellite, which will be launched early in 1991, the ERS-2 satellite, which will follow-up ERS-1 from 1994, and the first polar platform developed as part of the Agency's Columbus programme, which will be launched in 1997. Agreements for reception of data from those satellites, particularly radar data, are under negotiation with the United

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States, Japan, Australia, China, Thailand, India, Pakistan, Brazil and Ecuador. It will be recalled that Canada, which will also be a major user of this programme, is taking an active part in its development.

In April 1990 the Agency concluded a framework agreement on cooperation with the Government of the Soviet Union. That agreement replaces and broadens the terms of a 1971 agreement with the USSR Academy of Sciences. Working groups are currently being set up in the various areas in which cooperation is envisaged, in particular scientific and Earth-observation programmes. The new agreement should provide a framework for the substantial development of space cooperation between Western European countries and the Soviet Union.

In addition, in recent months many contacts have been made with various countries of Central and Eastern Europe. At present, there is the prospect of an agreement on cooperation with the Hungarian Republic. Intense contacts among all specialists from all European countries can only benefit the development of international cooperation.

For its part, the Agency considers that it can make a contribution by promoting visits, training programmes and specific points of cooperation, inter alia, through access to an information-retrieval system and consideration of possibilities for participation by neighbouring countries in many Agency activities.

That anticipated development of cooperation with European countries not members of the Agency by no means implies any slowing in cooperation with other regions. The Agency is continuing its programme of training courses in Asia, Africa and Latin America and its efforts to develop programmes of cooperation, inter alia, in liaison with regional development banks. In particular, it is making the broadest possible contribution to activities of

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the United Nations Outer Space Affairs Division, the Food and Agriculture Organization of the United Nations and the United Nations Environment Programme. It will be possible to go into greater detail on this during the Committee's consideration of agenda item 7.

The Agency is an active participant in many projects under the International Space Year. We have made proposals to the Expert on Space Applications, Mr. Abiodun, on developing the use of Earth-observation satellite data in North and West African countries by making better use of existing images or images to be captured; this could assist the countries concerned in better planning and organizing their development programmes. Those proposals were formulated in the context of the United Nations contribution to the activities of the International Space Year. This activity involves making available to African countries sets of data that have been or will be received by the Earth stations at Fucino, Italy, and Maspalomas, Canary Islands.

In liaison with the United Nations Secretariat, the Agency hopes to take an active part in activities useful for the socio-economic development of countries, not only by giving them compatible satellite data from various United States, Japanese, French and European satellites, but also by organizing training courses that will ensure the best possible use of that data.

Likewise, the Agency, in cooperation with the Commission of the European Communities, is offering its cooperation to interested African countries to ensure coordinated use of the TIROS and METEOSAT meteorological satellites.

This quick summary shows that the Agency is pursuing its mission of developing international cooperation. Its activities are possible only thanks

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to the support it receives from its member States and through the strengthening of its coordination with the Commission of the European Communities.

Alongside major infrastructure programmes - Ariane V, Columbus and Hermes - which demonstrate Europe's technological capacity, the Agency wishes also to contribute to developing uses of space technology which will be beneficial to mankind. Since environmental protection is now a growing concern for mankind, ESA will work to ensure that its programme of Earth observation by satellite will make the greatest possible contribution to monitoring certain parameters which affect our environment, and that this information not only be accessible and available to all, but also that it be used in the interest of all peoples.

ATTENDANCE BY NON-MEMBERS OF THE COMMITTEE

The CHAIRMAN: I should like to inform members that we have received a note verbale from the Permanent Representative of Bolivia in which he requests permission to attend the current session of the Committee on the Peaceful Uses of Outer Space as an observer. May I suggest that, in conformity with past practice, we invite the delegation of Bolivia to attend the current session of the Committee. If there is no objection, we shall proceed accordingly.

It was so decided.

The meeting rose at 4.40 p.m.